Continuing His Education

THERE IS A GROWING FERMENT of professional and public interest in improving every aspect of health care. A particular concern is to make certain of the continued competence of practicing physicians and other health professionals in the present period of rapid scientific and technologic advances. In any circumstance and particularly in these times a physician who is responsible for the care of patients must maintain his competence and skills, and it is reasonable that there should be some assurance that this is in fact the case. The means by which this is to be done are now undergoing careful review; new and experimental techniques are being tried, and change is the order of the day.

The root problem, how today's practicing physician is to keep up-to-date, is not an easy one to solve. It takes about ten years to educate a physician and establish him in practice. At the same time, the body of medical knowledge doubles approximately in this interval and it has been aptly said that the half-life of a medical education is therefore only about ten years. Somehow in the face of all this a physician must keep up—or be kept up—in the interest of his patients' care. The matter is how? This becomes a most important question at a time when medical science is expanding by geometrical progression and the nation and the world face a shortage of practicing physicians for the foreseeable future.

Fortunately it is not necessary for every physician, or even any physician, to know all about every aspect of the art and science of medicine or to keep up with every step of medical progress. This being the case, it is necessary somehow to identify that new knowledge and those new skills which an individual physician should master, to effect their transfer into his awareness and to provide some evidence that this has been satisfactorily accomplished. The enormous complexities of this rather simply stated problem would suggest that perhaps some of the concepts in modern systems analysis might profitably be applied to promote the most efficient use of resources, be they the knowledge and skills of medical science, modern techniques for the storage and transfer of information, or the scarce spare time of the physician in a busy and demanding practice.

Since World War II there has been growing interest in these problems of continuing education for practicing physicians. It has gained momentum in parallel with recognition of the dramatic progress in medical science which began to take place during this period. This is the fourteenth year in which the *Journal of the American Medical Association* has published a comprehensive listing of postgraduate courses given throughout the nation. Both the California Medical Association and the American Medical Association have initiated programs to accredit those courses which meet certain standards. The American Academy of General Practice has made attendance at approved programs a condition of continued membership and this has proven an effective stimulus and satisfactory to the group. The American College of Physicians is experimenting with a confidential individual medical knowledge self-assessment program which attempts to identify for each physician where his knowledge is weak and to supply him with readily available references through which he can remedy his weaknesses. This program depends heavily upon the motivation of an individual physician for its success.

The California Medical Association also has a record of leadership in continuing education. Its Regional Postgraduate Institutes and Circuit Courses annually carry up-to-date information from major medical centers to physicians in more remote areas of the state. In its publication *What Goes On,* the Committee on Continuing Education of the Scientific Board brings current information concerning educational opportunities of all kinds to every physician in the state. Last year it held a "Planning and Goals Conference" which focused particularly upon the role of hospitals in continuing education and the problems of evaluation, motivation and accreditation or approval of courses or programs. As a result of this conference CMA has urged hospital medical staffs to require each staff member annually to list the courses he has attended. In cooperation with the Bureau of Research and Planning, this committee has conducted a survey of the attitudes and opinions of 2,600 California physicians. That survey is reported elsewhere in this issue (page 245).

All these activities are to be commended. They represent serious and responsible efforts to find answers to a most important problem. They should be continued and developed further. The stronger elements in the various approaches should be combined for greater efficiency and usefulness. But there is still a long way to go before this enormous problem is solved to the full satisfaction of either the profession or the public. It would seem that

this continuing educational process must somehow become more efficient. Among other things, this will require more attention to what new information needs to be disseminated to whom, and to the special educational needs of that most important recipient, the individual practicing physician. In addition, motivation of the busy physician and means to fill his needs must somehow be built in, together with suitable mechanisms to evaluate the effectiveness of the entire process.

The situation may realistically be viewed as one of an expanding universe of medical science in interaction with another expanding universe of demands upon the practicing physician for services to patients, other health professionals, the community, the state, the nation and, perhaps before we even realize it, the world. But in this expanding situation the number of hours in any doctor's day remains absolutely constant. This inescapable fact sharply limits what any physician can do in a day or even a lifetime, and emphasizes that not a moment of the time he can devote to his continuing education should be wasted.

Since each physician possesses a different body of knowledge and experience, it would seem logical that his program of continuing education should be individualized if his time for this purpose is to be used most productively. It therefore follows that the somewhat diffuse concept of "continuing education" for all physicians will necessarily evolve into a more specialized, even personalized approach emphasizing "continuing *his* education" for each practicing physician. This could and should be truly stimulating for all concerned.

Changing Concepts of Coronary Care

THE HIGH MORTALITY rate associated with acute myocardial infarction together with the development of reliable monitoring systems and effective resuscitative techniques stimulated the creation of coronary care units. The original concept of prompt resuscitation of patients in cardiac arrest proved to have limited therapeutic potential; most of the patients died. The recognition of premonitory signs of serious arrhythmia and the introduction of effective antiarrhythmic drugs and pacemakers has produced in recent years a shift in emphasis to prevention of life-threatening dysrhythmias. Several studies clearly document the efficacy of this approach.[1,2]

However, mortality from acute myocardial infarction complicated by shock or severe heart failure remains distressingly high. Clearly, indices of myocardial function should be monitored in this group of patients. Many coronary units now are utilizing hemodynamic and biochemical measurements for assessing the degree of myocardial dysfunction as well as the response to various therapeutic programs. Such an approach, obviously, calls for an exceptionally skilled physician-nurse team.

The cornerstone of effective coronary care is this highly trained cadre of physicians and nurses. The nurses must be highly skilled in recognizing premonitory danger signals and should be empowered to initiate appropriate therapy. In this issue of CALIFORNIA MEDICINE, Stein and his associates report the need for trained personnel in established (or projected) units in California. Lack of the needed training may, in part, explain the observed under-utilization of nursing staff within some existing units. The need for properly trained personnel is an important community health priority and we applaud the efforts of the California Heart Association and the Regional Medical Programs* in expanding physician-nurse training programs to meet this need.

*Regional Medical Programs recently has approved three operational grants for the training of physicians and nurses working in Coronary Care Units. These grants have been awarded to Area 1 (University of California at San Francisco), Area 5 (University of Southern California), and Area 4 (University of California at Los Angeles).

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2. Killip, T., and Kimball, J. T.: Treatment of myocardial infarction in a coronary care unit, Amer. J. Cardiol. 20:457, 1967.

Doctrine In An Age of Science

A RECENT AND far reaching pronouncement of doctrine from across the sea invites thoughtful consideration of what is to be the place of doctrine from whatever source in a rapidly materializing age of science. Webster defines doctrine as "something that is taught: something that is held, put forth as true, and supported by a teacher, a school